Next Generation Network Development in Japan

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Shin Hashimoto, Executive Vice President, Nippon Telegraph and Telephone Corporation (NTT)

NTT's Medium-term Management Strategies and Next-generation Network Initiative

NTT is now engaged in building the next generation network named "NGN." In recent years, there has been an increasing momentum of utilizing fiber-based broadband services with much higher speed and more stable connectivity. While demand for the fiber-based services has been significantly increasing, NTT still owns large legacy public switched networks that need to be upgraded in the near future. In view of these circumstances, NTT has decided to build its own Next-generation Network in conjunction with optical fiber-based broadband access--as new network infrastructure--through which a wide variety of broadband ubiquitous services could be delivered.

NTT's Next Generation Network will bring together the features of a conventional fixed-line telephone network, such as quality and reliability, but with the greater convenience and scale economy of the Internet.

Technological Features of the NGN

Quality of Service (QoS) control technology enables NTT to provide quality voice telephony services over IP networks at the level of existing landline telephony services. Our Next-generation Network will be able to meet various needs of our customers by providing a wide range of quality services and robust security functionalities. The NGN by NTT complies with standards adopted by international organizations.

Developing new business models for Next Generation Networks

It is our belief that our NGN, as new communication infrastructure, should have interconnectivities with other service providers in and outside of Japan. NTT wishes to develop new business models that best utilize the NGN for collaboration with partners, in a relationship of mutual trust, to create rich diversity of new businesses and services. Specifications of connectivity interfaces have been made available to the public.

Perspective on Field trials and NGN Commercial Deployment

As the first step of our Next Generation Network implementation, NTT began field trials in December of 2006. These field trials are intended to verify the technological and operational issues of our NGN's commercial deployment. A number of companies have been participating in our field trials, conducting interoperability testing with open interfaces. They have been developing new business models and discovering numerous collaborative opportunities by using various applications and endpoints over NGN platforms. Our field trials are open to anybody who is willing to collaborate with us, in and outside of Japan, and the trials will continue for a one year-period. We will be working closely with various stakeholders in various industries and developing comprehensive plans for our network integrations in the future.

Next Generation Network Development in Japan

Shin Hashimoto, Executive Vice President,
Nippon Telegraph and Telephone Corporation (NTT)

Information and Communications Trends in Japan and NTT's Broadband Development

The telecommunications industry is in the middle of a major paradigm shift as Internet Protocol (IP)-based networks, broadband access, and ubiquitous networking evolve. There has been an intensive debate within the Japanese government (and in Japanese industry) regarding the future of telecommunications networks. For the last few years, the Japanese government has formulated national broadband strategies called "e-Japan" and "u-Japan", with the specific goals of broadband deployments aimed at promoting innovative business models such as e-commerce. NTT has played a crucial role in developing fiber-optic-based broadband in line with these government strategies as a leading and responsible network infrastructure provider.

NTT's Medium-term Management Strategies and Next-generation Network Initiative

On the basis of NTT's medium-term management strategy, which the company has announced in November 2004, NTT is now engaged in building a next-generation network named 'NGN'. In recent years, there has been an increasing momentum of utilizing fiber-based broadband access

services with much higher speed and more stable connectivity. While the demand for the fiber-based services has been significantly increasing, NTT still owns large legacy public switched networks which need to be upgraded in the near future. In view of these circumstances, NTT has decided to build its own Next-generation Network in conjunction with optical fiber-based broadband access--as new network infrastructure-- through which, a wide variety of broadband ubiquitous services could be delivered.

Our Next-generation Network will bring together the features of a conventional fixed-line telephone network, such as quality, and reliability, but with the greater convenience and the economies of scale of the Internet.

NTT's Fundamental Policy and Plan on the NGN Initiative

(1) Technological Features of the NGN

One of the key technologies of the NGN is "Quality of Service (or QoS)" control technology. This enables us to provide quality voice telephony services over IP networks at the level of existing landline telephone services. Our Next-generation Network will be able to meet various needs of our customers by providing a wide range of quality services, from 'best-effort' to 'guaranteed' services, which are enabled by QoS control technology. In addition to this feature, the NGN is equipped with robust security functionalities that protect against malicious activities such as network intrusion.

The NGN by NTT complies with international standards adopted by international organizations

such as the ITU and IETF, and our company will continue to work with these organizations to seek international standardization.

(2) Developing new business models for Next-generation Networks

It is our belief that our NGN, as new communication infrastructure, should have interconnectivity with other service providers inside and outside of Japan. Partnerships with Internet service providers (ISPs) and other customers, including enterprises, are also of great importance as has been the case in the past. Furthermore, NTT wishes to develop new business models that best utilize our NGN for collaboration with partners, in a relationship of mutual trust, to create a rich diversity of new businesses and services. Placing a great emphasis on the importance of open access to our NGN, specifications of interfaces for connecting endpoints and application servers with other NGNs, as well as interconnections with other service providers, have been made available to the public.

The public Internet will continue to embrace the freedom of the net and to evolve as an important business platform for innovation. At the same time, a more secure and high-quality network is required for the mature services needed as indispensable social infrastructure. NTT's NGN will enable our customers to choose from a variety of connectivity and network platforms based on their business and other interests.

(3) Perspective on Field trials and NGN Commercial Deployment

As the first step of our NGN implementation, NTT began field trials in December of 2006. These field trials are intended to verify the technological and operational issues of our NGN's commercial deployment. A number of companies have been participating in our field trials, conducting interoperability testing with open interfaces. They have been developing new business models and discovering numerous collaborative opportunities by using various applications and endpoints over NGN platforms. Our field trials are open to anyone who is willing to collaborate with us, inside and outside of Japan, and the trials will continue for a one year-period. Field trials will be completed after thorough evaluations of the findings and tentatively commercial deployment of our NGN is targeted for the spring of 2008. As our NGN and other NGNs mature in the future we envision the migration of switched networks to NGNs, interworking between NGNs and cellular networks, and the convergence of broadcasting and telecommunications services. We will be closely working with various stakeholders in various industries in developing comprehensive plans for our network integration in the future.